

Breastfeeding with Diabetes





Objectives

- Identify barriers to establishing successful breastfeeding for diabetic mothers and their infants.
- Discuss lactation support measures for mother- infant dyads impacted by diabetes.
- Discuss the protective role breastfeeding provides for the gestational diabetic mother to reduce the risk of developing type 2 diabetes later in life.



Barriers to Breastfeeding

- Separation
- Cesarean birth
- Maternal health (hypertension)
- Blood sugar issues in type 1
- Infant in NICU
- Prematurity / Late Preterm






Lactation Support Plan

- Initiate breastfeeding
- Pumping if indicated
- Encourage skin to skin
- Assist with latch/positioning
- Provide education
- Reinforce education
- Reassure
- Repeat above steps!



Lactation Support Steps

- Obtain thorough history
 - Assess
 - Identify their support
 - Coordinate with hospital support team
 - Listen to their story
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Risk Factors for Decreased Milk Supply

- Obesity
- Advanced maternal age
- PCOS/ Metabolic syndrome
- Insulin resistance
- Thyroid disorder
- Breast changes
- Metformin
- Hypertension



Lactation Challenges

- Sleepy
- LGA
- Preterm
- Immature
- Poor or no suck
- NG tube
- Support mom's milk supply
- OT /PT consult?

Type 1 Diabetic

32 year old married g3p3 delivered late preterm female by C/S. (infants weight was appropriate for gestational age.) Mother had an insulin pump, had remained in careful control throughout pregnancy. She reported she had successfully breastfed her first two babies. She experienced low blood sugars first 2 days after delivery and reported to her nurse upon returning to 8E that her baby's nurse had a shot gun at the bedside. Her husband immediately requested nurses check her sugar! Couple reported she needed no additional insulin beyond her basal rate for 2 days. Husband very involved in management of his wife's diabetes until she was stabilized. She had been started pumping in addition to coming to NICU for feeds when sugars stabilized. She was assisted by LC with latch/positioning, teaching etc. Breastfeeding became increasingly successful, discharged home with well established milk supply and typical late preterm support plan. Breastfeeding, supplementing with expressed milk and pumping to protect milk supply.

Type 1 Diabetic- II

29 year old married, well educated, Type 1 diabetic delivered 36 wk, LGA infant by C/S. She reported history of sub-optimal control prior to pregnancy with significantly improved control when she became pregnant. Preferred testing and multiple daily insulin injections to insulin pump, and stated she had been instructed to decrease her basal insulin levels by $\frac{1}{2}$ after delivery by her endocrinologist. Infant was admitted to NICU for hypoglycemia and respiratory support. Mother related the first 2 days post delivery were difficult due to surgery and unstable blood sugars. She pumped inconsistently and experienced drops in blood sugars with pumping ie: 96 to 66. Infant was sleepy and fed poorly initially and began to breastfeed more effectively by 72 hrs. of age. The infant was supplemented routinely with formula pc. Mother received consistent LC support that included assist with breastfeeding, reinforcement of support plan that included verbal instructions and direct support with pumping and management of engorgement. Milk supply was low at time of discharge and mother stated: "I didn't realize until yesterday I needed pump after breastfeeding."

Type II Diabetic

- 19 yr. old single, g1p1 type 2 diabetic controlled by diet and Metformin. She shared that she and her mother had been diagnosed with type 2 diabetes, and that her mom had died recently from a heart attack at age 50, quickly adding: "but not from diabetes." She also reported that she frequently managed her blood sugars with "couple of candy bars and a coke in the afternoon." When LC questioned her about educational support she'd received during her pregnancy, she sited lack of transportation from Boise bench area to Humphreys center as her reason for not attending classes. She had very little family support and despite continued education and LC support she did not continue breastfeeding/ pumping..

Gestational Diabetes

- 38 year old g2p2, married, well educated mother who was diagnosed with gestational diabetes the day before she delivered her baby boy at 32 wks gestation. She reported she'd been assured that everything would resume to normal after delivery, but remained very insulin resistant 10 wks later despite careful attention to diet, a 30 pound weight loss, and return to optimal BMI. She pumped consistently and while her supply increased more slowly than expected, she did gradually reach a full milk supply. She plans to continue to pump and provide her baby with her milk via GT tube due to health issues.

“Gestational Diabetes was a blessing in disguise”

Mother who was in her late 30's and had just given birth to her 3rd child shared this story. She had developed severe autoimmune symptoms that were completely destroying her life. She had seen multiple physicians and had been prescribed increasingly higher doses of steroids that had additional side effects. She was no longer able to work as a housekeeper and was scheduled to have a hearing to obtain disability. In the midst of all this she discovered she was not only expecting a baby but was also diagnosed with gestational diabetes. She managed her GD by diet and realized all her symptoms were disappearing. With the onset of premature labor she had been admitted to the hospital and her symptoms came roaring back, this time with a significant red, leathery appearing rash all down her back that was painful. She was wearing a gown to see her infant because of uncertainty of source of the rash. I asked her what changes she'd made and what had changed once she was admitted to hospital. It seems that she had removed any wheat/gluten from her diet because she felt it was the easiest way to deal with unwanted carbs. Upon admission to the hospital she had been sent a peanut butter sandwich mid morning and mid afternoon as a snack. LC referred mother to her physician for follow up for re-evaluation of possible underlying cause of her symptoms. She told me she'd told her husband: "Gestational diabetes was a blessing in disguise for me."

Trial to Reduce IDDM in Genetically at risk (TRIGR)

Research / 15 countries/ 5606 infants of Type 1 mothers

- Question: would weaning to an “extensively hydrolyzed formula (Nutramigen) in infancy will decrease risk of type 1 diabetes later in childhood.
- “Short term breastfeeding, early exposure to complex dietary proteins (cows milk proteins...)implicated as risk factors for advanced B –cell autoimmunity or Clinical Type 1 diabetes”
- Theory was that weaning to Nutramigen to postpone exposure to intact bovine insulin....evidence showed that children who present with T1 diabetes reported to have increased gut permeability and sub clinical intestinal inflammation.

Knip (Am J. Clin Nutr 2011

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TRIGR Continued

- “Early nutritional intervention could offer a safe, preventive modality for type 1 diabetes with out the risks of aggressive immune interventions....” Knip 2011

- Does the best nutritional intervention really come in a can?

Hecker 2013



Comparison of Gut Microflora

Breast Milk

Bifidobacteria

Fecal samples:

Lactobacilli

Streptococci

Formula

Bifidobacteria

Bacteroides

Fecal samples

Staphylococci

Escherichia coli and

Clostridia

GDM and Lactation

- Breastfeeding for longer than 3 months reduced the risk of T₂DM
- Less than 1 month- same as no breastfeeding
- Successful lactation improves maternal glucose tolerance
- No protection for antibody –positive women (those who required insulin during pregnancy)
- Dose dependent

Women's Health Initiative

Postmenopausal women who had breastfed
7-12 months experienced lower risk of:

- Hypertension
- Diabetes
- Hyperlipidemia
- Cardiovascular disease

Study of Women, Infant Feeding, and Type 2 Diabetes (Swift) Kaiser Permanente N. Cal.

522 women followed after gestational diabetes.

Finding: Exclusive or mostly breastfeeding groups
had lower prevalence of diabetes or prediabetes

Conclusion

Breastfeeding is not only beneficial to the child but increasing evidence suggests that it is beneficial to the mother as well. Successful lactation improves maternal glucose tolerance... Mohammad

Successful breastfeeding rather than being preventative, is predictive of lower risk of future diabetes Ziegler et al.

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